E-waste Not, E-want Not:

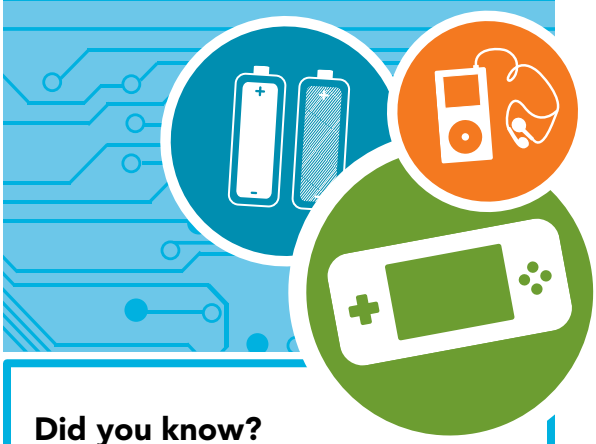
Where does it all end up?

Learning Objectives: Students will heighten their awareness of the number of electronic items in their homes and explore where these products go when they are done being used.

Subjects: Science, Social Studies, Mathematics, Environmental Education, Family and Consumer Education

Wisconsin Model Academic Standards: SC A.4.5, B.4.3, C.4.5, C.4.6, C.8.2, C.8.6, SS H.4.2, D.4.7, D.8.11, M A.4.2, E.4.2, E.4.3, EE A.4.1, A.4.2, A.8.2, A.8.5, B.8.20, C.4.2, C.8.2, D.4.2, D.4.3, D.4.4, D.4.5, FCE introductory A.2.

Grades: 4-6



Did you know?

- Nearly 250 million computers will become obsolete between the years 2005 and 2010.
- Many people discard computers every 3 to 5 years.
- In 2001, only 11 percent of personal computers retired in the US were recycled.
- Mobile phones in the US were discarded at a rate of 130 million per year in 2005, resulting in 65,000 tons of waste.
- TVs and computers can contain an average of 4 pounds of lead (depending on their size, make, and vintage) as well as other potential toxins like chromium, cadmium, mercury, beryllium, nickel, zinc, and brominated flame retardants. These materials need to be handled carefully.

Source: US EPA, 2005

Materials: "Where Does It All End Up?" take home worksheet

Procedure: Have students predict what electronic items they'll find the most of in their homes. Then have students fill out the worksheet at home to discover how many consumer electronic products their family uses. Once students have completed their worksheets, have them bring the worksheet back to class for a group discussion.

Pre-Activity Questions:

1. What types of electronic products do you use at your house? Make a class list. What electronic items do you think you'll have the most of at home?
2. What do you use these products for? (i.e., watching TV, calling a friend, playing video games)
3. Pick a couple of products listed and talk about what life might have been like before these products were invented. What did people use as an alternative to the product? (i.e., video games and board games)
4. Ask the students where these products go when we are done using them. What are some alternatives to throwing them away (reuse, recycle)? Talk about the different components of some of the products and what might be recyclable in them (plastic, aluminum, glass, steel, other metals).

Post-Activity Questions:

5. What electronic items did everyone have in their homes?
6. How close were you with your predictions for what electronic items you have the most of at home?
7. Tally up your class's electronic items totals and put them on the chalkboard.
8. For each item, have students calculate the average number of products per person in the class (for example 2.4 TVs per student).
9. Using the per person average you found from your class, try to calculate how many TVs there might be in the municipality (city/town/village) you live in. Take your municipality's population and multiply it by the average number of TVs per person you found. Do the same for cell phones and computers.
10. Find out what recycling options are available in your community for used electronics items. Identify short-term and long-term solutions to the electronic waste problem and discuss the consequences (both positive and negative) of the proposed solutions.

Name _____

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Take Home Worksheet

1. Use these charts to count how many of each item you have in your home. Ask a family member to help tally all of the electronic items you can find.

Item	Number of items
TV	
Phone	
Cell phone	
DVD/VHS player	
Stereo/radio	
Video game system	
Computer	
Fax machine/copier	
MP3 player (iPod and similar)	
Camcorder	
Camera	
GPS hand held navigation system	
(Other items)	

Item	Number of items
(Other items continued)	
Total number of electronic items in my home:	

2. On a separate sheet of paper, make a bar graph or pie chart showing what you recorded on the chart above.